

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: Unknown )  
)  
Filing Date: Unknown )  
)  
Priority Date: 30 September 2000 )  
)  
Applicants: WHITEHEAD, Matthew )  
)  
For: IMPROVEMENTS TO ELECTRONIC )  
PROGRAM GUIDE )

**PRELIMINARY AMENDMENT**

Director For Patents  
Box: New Application  
Washington, D.C. 20231

Dear Sir:

This is a preliminary amendment to the enclosed application entitled "Improvements to Electronic Program Guide" claiming priority to British Patent Application No. 0023993.9 filed 30 September 2000.

**In the Title:**

change "Programme" to --Program--

**In the Specification:**

Please amend the specification as follows:

Page 1, after the title, insert the following headers and paragraph:

**--CROSS-REFERENCE TO RELATED APPLICATION**

This application claims priority to British Patent Application No. 0023993.9 filed 30 September 2000.

**BACKGROUND OF THE INVENTION-**

Page 1, lines 2, 12, 15, 23, and 28, change "programme" to --program--; lines 5, 9, 10,

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and 15 change "programmes" to --programs--.

Page 2, line 1, change "broadcaser" to --broadcaster--; lines 6, 10 two occurrences, 15, 17, 23, 25, 26, 29 and 32, change "programme" to --program--; lines 12 and 14 change "programmes" to --programs--.

Page 3, lines 1, 5, 12, 17, 18, 22, 23, 26 and 30, change "programme" to --program; before line 6, insert the Header:

**--SUMMARY OF THE INVENTION--**

Page 3, line 14, change "programmes" to --programs--.

Page 4, lines 3 two occurrences, 5, 8 two occurrences, and 23, change "programme" to --program--; line 19, change "programmes" to --programs--.

Page 5, lines 5, 10, 13, 15, 17, 19, 24 and 25, change "programme" to --program--; line 6, change "programmes" to --programs--; before line 7 insert the following header:

**--BRIEF DESCRIPTION OF THE DRAWINGS--**

Page 5, before line 14, add the Header:

**--DESCRIPTION OF THE PREFERRED EMBODIMENTS--.**

Page 6, lines 2, 17 and 21, change "programme" to --program--; line 31, change "utilising" to --utilizing--.

Page 7, lines 3, 6, 7, and 13, change "programme" to --program--; line 8 change "MPEG2" insert --Moving Picture Experts Group (MPEG2)--; line 13, change "programmes" to --programs--.

Page 8, lines 1, 6, 11, 16 and 17, change "programme" to --program--; line 17, change "programmes" to --programs; after the last line, insert the following paragraph:

--While the invention has been described with a certain degree of particularity, it is

manifest that many changes may be made in the details of construction and the arrangement of components without departing from the spirit and scope of this disclosure. It is understood that the invention is not limited to the embodiments set forth herein for purposes of exemplification, but is to be limited only by the scope of the attached claim or claims, including the full range of equivalency to which each element thereof is entitled.--

**IN THE CLAIMS:**

1. (Amended) A television system, said system comprising a broadcast data receiver for receiving data which is broadcast from a remote location and which includes video, audio and auxiliary data, processing said data to generate video, audio and auxiliary services via an on-screen display and speakers connected with the broadcast data receiver [and];

from said auxiliary data, an electronic [programme] program guide [(EPG) can] may be generated on screen to provide information and facilitate user selection of [programmes] programs for viewing at that instant or in the future; and [characterised in that there is provided]

a memory means in which video and/or audio data [can] may be stored for subsequent retrieval and display upon the selection of a [programme] program from the electronic [programme] program guide and to which a portion of [said] the stored video and/or audio data relates.

2. (Amended) A television system according to claim 1 [characterised in that the] wherein said retrieval and display of [the] said video and/or audio data from the storage means is in response to a user request for further information with respect to a particular [programme] program displayed on [the EPG] said electronic program guide.

3. (Amended) A television system according to claim 1 [characterised in that] wherein a video and/or audio clip or trailer for [the] a particular [programme] program is generated from [the] said data retrieved from storage and shown to the user.

4. (Amended) A television system according to claim [4 characterised in that] 3 wherein the user has the option, after or during viewing the clip or trailer, to select the [programme] program automatically or in the future via [the EPG] said electronic program guide.

5. (Amended) A television system according to claim 1 [characterised in that] wherein the storage means is in the form of a hard disc memory provided as part of [the] said broadcast data receiver.

6. (Amended) A television system according to claim 1 [characterised in that the] wherein said video and/or audio data used to generate the clips or trailers in accordance with the invention, is downloaded at designated time intervals and stored.

7. (Amended) A television system according to claim 6 [characterised in that the] wherein said downloading of [the] said video and/or audio data occurs when [the] said broadcast data receiver is less likely to be in use for other functions.

8. (Amended) A television system according to claim 1 [characterised in that the includes] including identification data so that upon the user requesting information for a particular [programme] program the appropriate portion of the data in the storage means can be identified

and retrieved for processing by [the] said broadcast data receiver.

9. (Amended) A television system according to claim 1 [characterised in that the] wherein said video data [which is] being transmitted for the generation of clips and trailers is a low resolution [of a lower resolution than that used for the generation of television programmes].

10. (Amended) A television system according to claim 1 [characterised in that the] wherein said data video data [which is] being transmitted for the generation of the clips and trailers is shown in a portion of [the] said display screen.

11. (Amended) A television system according to claim 1 [characterised in that] wherein further auxiliary information is generated via [the] said data stored in the storage means for retrieval upon the selection of a related [programme] program via [the EPG] said electronic program guide.

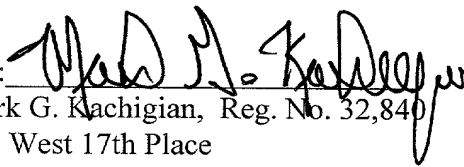
#### REMARKS

Attached is the clean version of the claims and new paragraphs as required in Section 1.121(4) (ii).

The application should now be in condition for examination, which is respectfully requested.

Respectfully Submitted  
HEAD, JOHNSON & KACHIGIAN

Dated: 28 August 2001

BY:   
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Attorneys for Applicant



### Replacement paragraphs to be inserted into Page 1

The invention to which this application relates is to improvements in electronic program guides which are a service provided, in digital broadcast data television systems, to users of the system, to indicate to the user the available programs at the instant of viewing or in the future.

The invention provides an improvement to this form of guide which adds to the information provided to the user.

Conventionally, if a viewer wishes to be aware of a range of programs which are available at a particular time or in the future, they refer to printed schedules of television programs which typically appear in newspapers, magazines and the like. In addition to providing the program title and times and channels of transmission, the printed schedules also typically provide a brief written description of the subject matter of the television program and, furthermore, certain programs may be selected for a particular written description.

While this conventional approach is more than sufficient for television systems which have perhaps 2, 3, 4 or 5 channels available for viewing at one time, the proliferation of channels which are now available and which has largely been made possible by the use of digital data transmission technology, means that most printed publications are no longer able to provide the space required for all channel program schedules to be printed.

In response to this, it is now possible to obtain, via an on-screen display, a schedule of television programming at the instant of viewing or in the future and said electronic schedule is known as an electronic program guide. This guide is typically generated by a broadcast data receiver which receives

### Replacement Paragraphs To be Inserted Into Page 2

data, including video, audio and auxiliary data from a broadcaster at a remote location. The broadcast data receiver can then process the data to generate video and audio via, for example, a television set and also an electronic guide from auxiliary data received. Upon user demand, typically via a remote control device, the electronic program guide can be generated on screen. The guide typically includes a grid in which a number of cells are arranged with respect to a time bar and a list of channels. Each cell represents a particular television program with the title of that program being entered in the cell. Thus, by reviewing the grid over a number of display pages, the user is able to identify programs for each particular channel and to view all of the available channel programs, if they require.

An additional feature of an electronic program guide is that the user may select to obtain further information relating to a particular program, typically by pressing a key on the remote control device which is indicated by the letter "I" for information. Upon depression of the key, the user will be able to view a window display generated by the receiver on the screen. The display window typically includes text that, with the text relating to the subject matter of the particular selected program. Thus it will be appreciated that the use of the information key is used to provide the information relating to a particular program which would typically be provided in the conventional printed television program schedule. However, while this information is undoubtedly welcomed by the user to provide some form of indication of the subject matter of a program, as it is relatively short and brief, the information may not fully provide the required information for the user to allow them to decide whether or not they wish to watch the program which, in turn, leads to the user having to select a



Header to be inserted into Page 3

## SUMMARY OF THE INVENTION

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### Replacement Paragraphs to be Inserted into Page 3

program and view the same for a period of time before deciding whether it is in fact of interest to them.

The aim of the present invention is to provide a means whereby useful and practical information relating to a selected program can be provided to a user via an on-screen display.

In a first aspect of the invention there is provided a television system, said system comprising a broadcast data receiver for receiving data which is broadcast from a remote location and which includes video, audio and auxiliary data, processing said data to generate video, audio and auxiliary services via an on-screen display and speakers connected with the broadcast data receiver and from said auxiliary data, an electronic program guide can be generated on screen for user selection of programs for viewing at that instant or in the future and wherein there is provided a memory means in which video and/or audio data can be stored for subsequent retrieval and display upon the selection of a program from the electronic program guide and to which a portion of said stored video and/or audio data relates.

Typically the retrieval and display of the video or audio data from the storage means is in response to a user requesting further information with respect to a particular program displayed on an electronic program guide (EPG). Thus, in addition, or alternatively to, the conventional text information being displayed, a video and/or audio clip or trailer for that particular program is generated from the data retrieved from storage and shown to the user. The provision of this clip or trailer thus provides the user with all of the information which they need to be able to decide whether or not they wish to watch the program. It is envisaged that the clip or trailer will be

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**Replacement Paragraphs To Be Inserted Into Page 4:**

television and/or in cinemas and/or are similar to those clips or trailers which are occasionally positioned at the front of a particular program prior to the actual program starting and are provided to illustrate to the user what they should expect to see if they subsequently decide to view the program. If having viewed the clip or trailer which is generated in accordance with the invention, the user wishes to watch the program, then they may do so by selecting the program automatically or in the future.

It is envisaged that the storage means can be any appropriate storage means and in one embodiment may be in the form of a hard disc memory provided as part of the broadcast data receiver. In this embodiment, the video and/or audio data which will be used to generate the clips or trailers in accordance with the invention, can be downloaded at designated time intervals, say once per day, and preferably when the broadcast data receiver is not likely to be in use, such as during the night.

In this way, sufficient video and audio data to generate clips or trailers for each, or a selected number of, programs in the following time period, prior to the next downloading of data, can be held in the storage means. In addition to the video and/or audio data, the data includes identification data so that upon the user requesting information for a particular program the appropriate portion of the data in the storage means can be identified and retrieved for processing by the broadcast data receiver.

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Headers to be Inserted into Page 5:

BRIEF DESCRIPTION OF THE DRAWINGS

DESCRIPTION OF THE PREFERRED EMBODIMENTS

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**Replacement Paragraph to be Inserted Into Page 5:**

In one embodiment, and in addition to the video and/or audio clip or trailer which is generated, further information may be generated via the data stored in the storage means such as for example web page information, profile information on actors appearing in the program which is selected, and/or details of further programs that may also be of interest to the user.

Figure 1 illustrates a conventional display for information relating to a particular program; and

Figure 2 illustrates an information display which can be generated in accordance with the present invention for the same program.

With reference to Figure 1 there is illustrated a conventional electronic program guide including a grid display 2 and this grid serves to display a number of cells 4, each of which represent a program which is available for viewing and the length of the cell, with reference to the time bar 6, indicates the length of the program. The position of the cell in regard to the rows 8 indicates the particular channel with respect to the channel list 10. A user can move a cursor, typically highlighting a particular cell 12 in which the same is positioned by using a remote control device which is not shown. When the cursor is on a particular program which may be of interest to the user, they can select either to view the program if it is available for viewing at that time and/or select to obtain information on the same, typically by pressing the button marked "I" on the remote control device.

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## Replacement Paragraphs to be Inserted Into Page 6:

In this example, the user has placed a cursor on a television program entitled the film "Saving Private Ryan" and they have selected to obtain information on the same by depressing the key marked "I" on the remote control device. In a conventional manner this causes a display window 14 to be generated with a textual summary of the film. It will be appreciated from a review of the text that while the general subject matter can be provided, it is not possible from this information for the viewer to actually reach a decision as to whether or not this film will be of interest to them as there is obviously a large range of films which relate to the similar general subject matter. Thus, the conventional information may be of some use but such use is limited.

In accordance with the present invention and with reference to Figure 2, if the user follows the same process as described in Figure 1 and then depresses the button marked "I" to obtain information on the same program, then the textual window may or may not be generated, and in this case, for ease of illustration, is not generated, but in any case, a video and audio display is generated in the form of a trailer for the selected program in which the video and audio scene 16 depicts typically a number of key points of the film. Thus from viewing the clip or trailer for the film which is generated, then the user can be aware of events which may occur throughout the film and hence make up their mind whether indeed the film is of interest to them. It will be appreciated that by viewing the video and/or audio clip, the user will be much more easily able to firstly gain an idea of the subject and secondly decide whether or not they wish to watch the same.

The video and audio clip or trailer can be generated in accordance to the present invention by utilizing a storage means which in one embodiment can be in the form of a hard disc

**Replacement Paragraph to be Inserted Into Page 7:**

drive provided in the broadcast data receiver. The integration and/or connection of high memory capacity hard disc drive to broadcast data receivers allows pre-recorded program trailers to be provided on demand in accordance with the present invention to allow the user to obtain a better understanding of the program content and helps the user to decide whether or not they want to watch or record the program in question. The storage of audio and video data in an Moving Picture Experts Group (MPEG2) compliant system, typically requires 2.5 GBytes of memory space in the storage means per hour. Typical storage means in accordance with the invention already contain many 10's of GBytes of storage capacity. Thus, for a broadcaster to store a 30 second program trailer for say 200 programs, within the broadcast data receiver storage means, requires approximately 10 GBytes of broadcast data receiver mass storage space.

**New Paragraph for Page 7 to be Inserted After the Last Line:**

While the invention has been described with a certain degree of particularity, it is manifest that many changes may be made in the details of construction and the arrangement of components without departing from the spirit and scope of this disclosure. It is understood that the invention is not limited to the embodiments set forth herein for purposes of exemplification, but is to be limited only by the scope of the attached claim or claims, including the full range of equivalency to which each element thereof is entitled.

Parameter	Value	Unit
Initial temperature	25.0	°C
Final temperature	25.0	°C
Initial pressure	1.013	bar
Final pressure	1.013	bar
Initial volume	0.001	m³
Final volume	0.001	m³
Initial mass	0.001	kg
Final mass	0.001	kg
Initial density	1000	kg/m³
Final density	1000	kg/m³
Initial viscosity	0.001	Pa·s
Final viscosity	0.001	Pa·s
Initial thermal conductivity	0.6	W/m·K
Final thermal conductivity	0.6	W/m·K
Initial specific heat capacity	4182	J/kg·K
Final specific heat capacity	4182	J/kg·K
Initial enthalpy	4182	J/kg
Final enthalpy	4182	J/kg
Initial entropy	1.306	J/kg·K
Final entropy	1.306	J/kg·K
Initial internal energy	4182	J/kg
Final internal energy	4182	J/kg
Initial Gibbs free energy	4182	J/kg
Final Gibbs free energy	4182	J/kg
Initial Helmholtz free energy	4182	J/kg
Final Helmholtz free energy	4182	J/kg
Initial chemical potential	4182	J/kg
Final chemical potential	4182	J/kg
Initial activity	1.0	
Final activity	1.0	
Initial fugacity	1.013	bar
Final fugacity	1.013	bar
Initial vapor pressure	1.013	bar
Final vapor pressure	1.013	bar
Initial saturation temperature	100.0	°C
Final saturation temperature	100.0	°C
Initial boiling point	100.0	°C
Final boiling point	100.0	°C
Initial melting point	0.0	°C
Final melting point	0.0	°C
Initial triple point	0.01	°C
Final triple point	0.01	°C
Initial critical temperature	373.95	°C
Final critical temperature	373.95	°C
Initial critical pressure	218.1	bar
Final critical pressure	218.1	bar
Initial critical density	322	kg/m³
Final critical density	322	kg/m³
Initial critical viscosity	0.00029	Pa·s
Final critical viscosity	0.00029	Pa·s
Initial critical thermal conductivity	0.12	W/m·K
Final critical thermal conductivity	0.12	W/m·K
Initial critical specific heat capacity	1889	J/kg·K
Final critical specific heat capacity	1889	J/kg·K
Initial critical enthalpy	4182	J/kg
Final critical enthalpy	4182	J/kg
Initial critical entropy	1.306	J/kg·K
Final critical entropy	1.306	J/kg·K
Initial critical internal energy	4182	J/kg
Final critical internal energy	4182	J/kg
Initial critical Gibbs free energy	4182	J/kg
Final critical Gibbs free energy	4182	J/kg
Initial critical Helmholtz free energy	4182	J/kg
Final critical Helmholtz free energy	4182	J/kg
Initial critical chemical potential	4182	J/kg
Final critical chemical potential	4182	J/kg
Initial critical activity	1.0	
Final critical activity	1.0	
Initial critical fugacity	1.013	bar
Final critical fugacity	1.013	bar
Initial critical vapor pressure	1.013	bar
Final critical vapor pressure	1.013	bar
Initial critical saturation temperature	100.0	°C
Final critical saturation temperature	100.0	°C
Initial critical boiling point	100.0	°C
Final critical boiling point	100.0	°C
Initial critical melting point	0.0	°C
Final critical melting point	0.0	°C
Initial critical triple point	0.01	°C
Final critical triple point	0.01	°C

- a memory means in which video and/or audio data may be stored for subsequent retrieval and display upon the selection of a program from the electronic program guide and to which a portion of the stored video and/or audio data relates.

3. (Amended) A television system according to claim 1 wherein a video and/or audio clip or trailer for a particular program is generated from said data retrieved from storage and shown to the user.

4. (Amended) A television system according to claim 3 wherein the user has the option, after or during viewing the clip or trailer to select the program automatically or in the future via said electronic program guide.

5. (Amended) A television system according to claim 1 wherein the storage means is in the form of a hard disc memory provided as part of said broadcast data receiver.



6. (Amended) A television system according to claim 1 wherein said video and/or audio data used to generate the clips or trailers in accordance with the invention, is downloaded at designated time intervals and stored.

7. (Amended) A television system according to claim 6 wherein said downloading of said video and/or audio data occurs when said broadcast data receiver is less likely to be in use for other functions.

8. (Amended) A television system according to claim 1 including identification data so that upon the user requesting information for a particular program the appropriate portion of the data in the storage means can be identified and retrieved for processing by said broadcast data receiver.

9. (Amended) A television system according to claim 1 wherein said video data being transmitted for the generation of clips and trailers is a low resolution.

10. (Amended) A television system according to claim 1 wherein said data video data being transmitted for the generation of the clips and trailers is shown in a portion of said display screen.

11. (Amended) A television system according to claim 1 wherein further auxiliary information is generated via said data stored in the storage means for retrieval upon the selection of a related program via said electronic program guide.

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